

C Program to count vowels, digits, spaces, consonants using the string concepts

An array of characters (or) collection of characters is called a string.

Declaration

Refer the declaration given below –

```
char stringname [size];
```

For example – char a[50]; string of length 50 characters.

Initialization

The initialization is as follows –

- Using **single character** constant –
char a[10] = { 'H', 'e', 'l', 'l', 'o', '\0' }
- Using **string** constants –
char a[10] = "Hello";

Accessing

There is a control string "%s" used for accessing the string, till it encounters '\0'.

The logic used to count **number of vowels** is as follows –

```
if(string[i]=='a'||string[i]=='e'||string[i]=='i'||  
string[i]=='o'||string[i]=='u')//checking the char is vowel vowel=vowel+1;
```

The logic used to count **number of digits** is as follows –

```
if(string[i]=='0'||string[i]=='1'||string[i]=='2'||  
string[i]=='3'||string[i]=='4'||string[i]=='5'||  
string[i]=='6'||string[i]=='7'||string[i]=='8'||string[i]=='9')  
digit=digit+1;
```

The logic used to count **number of spaces** is as follows –

```
if(string[i]==' ')  
space=space+1;
```

Else, remaining all consonants.

Program

Following is the C Program **to count vowels, digits, spaces, consonants by using the string concepts** –

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```
#include<stdio.h>
int main(){
    char string[50];
    int i,vowel=0,digit=0,space=0,consonant=0;
    printf("enter any string includes all types of
characters:
");
    gets(string);
    for(i=0;string[i]!='\0';i++){
        if(string[i]=='a' || string[i]=='e' || string[i]=='i'
||
        string[i]=='o' || string[i]=='u')//checking the
char is vowel vowel=vowel+1;
        else
if(string[i]=='0' || string[i]=='1' || string[i]=='2' ||
        string[i]=='3' || string[i]=='4' || string[i]=='5'
||
        string[i]=='6' || string[i]=='7' || string[i]=='8'
|| string[i]=='9')
            digit=digit+1;
        else if(string[i]==' ')
            space=space+1;
        else
            consonant=consonant+1;
    }
    printf("vowel=%d
digit=%d
space=%d
consonant=%d
",vowel,digit,space,consonant);
    return 0;
}
```

Output

The output is given below –

enter any string includes all types of characters:

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vowel=9

digit=8

space=5

consonant=17